

Assessing sea grass meadows condition at 'El Río' Special Area of Conservation off 'La Graciosa e Islotes del Norte de Lanzarote' Marine Reserve

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Abstract

Cymodosea nodosa meadows, known as 'sebadales' or 'manchones' at Canary Islands, represent EU-NIS habitat type code A5.5311, called Macaronesian Cymodocea beds. As it's described at European Union Habitats Directive (92/43/CEE) Annex 1, sea grass meadows belong to 1110 Sandbanks which are slightly covered by seawater all the time, within Natura 2000 Network.

Several 'sebadales' throughout the archipelago are included in this Network as Special Areas of Conservation. *Cymodosea nodosa* is regionally included within the Canary Islands Protected Species List (Ley 4/2010), as a species 'of interest to ecosystems of Canary Islands', is usually found at a narrow depth range (10 to 20 m of depth) and, on the whole, best structured meadows are settled at sheltered bays, away from wave and current beating, flimsier at exposed areas. Deeper meadows are also sparser, being *C. nodosa* replaced by green algae *Caulerpa prolifera* and *Caulerpa racemosa*, although mixed algae-sea grass meadows are often found at different depths.

The project Assessment of marine flora ('sebadal', maërl, 'mujo') of 'La Graciosa e Islotes del Norte de Lanzarote' Marine Reserve, funded by 'Viceconsejería de Pesca y Aguas de la Consejería de Agricultura, Ganadería, Pesca y Aguas', Canary Islands Government, has had the aim of assessing sea grass meadows condition and distribution at 'El Río' Natura 2000 Network Special Area of Conservation, the channel between La Graciosa and Lanzarote. 'LA GRACIOSA 1311' cruise was performed within the framework of the project.

First of all previous information on sea grass shallow distribution (up to a depth of 20 m) in the study area was reviewed. Afterwards, a tugged underwater video camera was used onboard of the Marine Reserve Surveillance Vessel to update cartographic info performing a grid of sampling stations, covering previously known distribution limits and verifying current presence/absence data and density.

Furthermore, population parameters were obtained in order to assess 'sebadal' condition. Fixed stations were selected in regards to this process, and methodology applied on them was as follows: five radial arranged transects were performed, identifying fragmentation (it estimates meadow continuity regarding observed cover), density (mean value of several shoots number counts with 20 x 20 cm grids placed every 2 m), height (mean value in cm of 10 independent samples by transect) and fish and macroinvertebrate species richness for each transect.

Graphic picture of sea grass density was made depending on two levels: low density level transects (≤ 10 shoots/grid (≤ 50 shoots/m²)) and medium density level transects (≥ 10 shoots/grid (≥ 50 shoots/m²)).

Main study result is an estimate for the study region ('El Río') and time of year of *Cymodocea nodosa* population total distribution cover which comes to 1.640.076 m², including a higher density 'sebadal' of 178.256 m².